Claims

1.   (Previously Presented) A motion controlled handheld device comprising:

a display having a viewable surface and operable to generate a current image;

a motion detection module operable to detect motion of the device within three dimensions and to identify components of the motion in relation to the viewable surface, the components comprising a first component parallel to the viewable surface, a second component parallel to the viewable surface and perpendicular to the first component, and a third component perpendicular to the viewable surface;

a display control module operable to display a cursor on the viewable surface, to determine a translation vector that is substantially opposite to the sum of the first component and the second component, and to translate the cursor across the viewable surface according to the translation vector in order to substantially maintain the position of the cursor in space with respect to the viewable surface;

a gesture database comprising a plurality of gestures, each gesture defined by a motion of the device with respect to a first position of the device;

a gesture mapping database mapping each of the gestures to a corresponding command;

a motion response module operable to identify a matching one of the gestures based on the motion and to determine a corresponding one of the commands based on the identified gesture; and

wherein the display control module is further operable to logically parse a viewable image into a plurality of grid sections, to set one of the grid sections as the current image, and to set another one of the grid sections as the current image in response to the determined command.

2.   (Original) The motion controlled handheld device of Claim 1, wherein the display control module is further operable to maintain the current image while the cursor translates across the viewable surface.

3.   (Original) The motion controlled handheld device of Claim 1, wherein the display control module is further operable to freeze translation of the cursor across the viewable surface in response to a command.

4.   (Original) The motion controlled handheld device of Claim 1, wherein the display control module is further operable to determine that the translation vector indicates translation of the cursor past an edge of the viewable surface and, in response, to reduce a magnitude of the translation vector to maintain the cursor within the viewable surface.

5.   (Original) The motion controlled handheld device of Claim 4, wherein reducing the magnitude of the translation vector to maintain the cursor within the viewable surface comprises reducing one or more components of the translation vector to maintain the cursor at least a predetermined distance from the edge of the viewable surface.

6.   (Original) The motion controlled handheld device of Claim 1, wherein the display control module is further operable to detect a value of the third component exceeding a threshold and, in response, to perform an operation based on a current location of the cursor with respect to the current image.

7.   (Canceled)

8.   (Previously Presented) The motion controlled handheld device of Claim 1, further comprising:

a first accelerometer operable to detect acceleration along a first axis;

a second accelerometer operable to detect acceleration along a second axis, the second axis perpendicular to the first axis; and

a third accelerometer operable to detect acceleration along a third axis, the third axis perpendicular to the first axis and perpendicular to the second axis; and wherein:

the gesture database further defines each of the gestures using a sequence of accelerations;

the motion detection module is further operable to detect motion of the device using accelerations measured by the first accelerometer, the second accelerometer, and the third accelerometer; and

the motion response module is further operable to match the accelerations measured by the motion detection module against gesture definitions in the gesture database to identify particular ones of the gestures.

9.   (Previously Presented)   A method for controlling a handheld device comprising:

generating an image on a viewable surface of the handheld device;

detecting motion of the device within three dimensions;

identifying components of the motion in relation to the viewable surface, the components comprising a first component parallel to the viewable surface, a second component parallel to the viewable surface and perpendicular to the first component, and a third component perpendicular to the viewable surface;

displaying a cursor on the viewable surface;

determining a translation vector that is substantially opposite to the sum of the first component and the second component;

translating the cursor across the viewable surface according to the translation vector in order to substantially maintain the position of the cursor in space with respect to the viewable surface;

storing a plurality of gestures in a gesture database, each gesture defined by a motion of the device with respect to a first position of the device;

mapping each of the gestures to a corresponding command;

identifying a matching one of the gestures based on the motion and to determine a corresponding one of the commands based on the identified gesture;

logically parsing a viewable image into a plurality of grid sections;

setting one of the grid sections as the current image; and

setting another one of the grid sections as the current image in response to the determined command.

10.   (Original) The method of Claim 9, further comprising maintaining the current image while the cursor translates across the viewable surface.

11.   (Original) The method of Claim 9, further comprising freezing translation of the cursor across the viewable surface in response to a command.

12.   (Original)   The method of Claim 9, further comprising determining that the translation vector indicates translation of the cursor past an edge of the viewable surface and, in response, reducing a magnitude of the translation vector to maintain the cursor within the viewable surface.

13.   (Original)   The method of Claim 9, further comprising detecting a value of the third component exceeding a threshold and, in response, performing an operation based on a current location of the cursor with respect to the current image.

14.   (Previously Presented)   The method of Claim 9, further comprising:

detecting acceleration along a first axis;

detecting acceleration along a second axis, the second axis perpendicular to the first axis; and

detecting acceleration along a third axis, the third axis perpendicular to the first axis and perpendicular to the second axis;

detecting motion of the device using accelerations measured by the first accelerometer, the second accelerometer, and the third accelerometer; and

matching the accelerations against gesture definitions in the gesture database to identify potential indicated ones of the gestures.

15.   (Previously Presented)   Logic for controlling a handheld device, the logic embodied as a computer program stored on a computer readable medium and operable when executed to perform the steps of:

generating an image on a viewable surface of the handheld device;

detecting motion of the device within three dimensions;

identifying components of the motion in relation to the viewable surface, the components comprising a first component parallel to the viewable surface, a second component parallel to the viewable surface and perpendicular to the first component, and a third component perpendicular to the viewable surface;

displaying a cursor on the viewable surface;

determining a translation vector that is substantially opposite to the sum of the first component and the second component;

translating the cursor across the viewable surface according to the translation vector in order to substantially maintain the position of the cursor in space with respect to the viewable surface;

storing a plurality of gestures in a gesture database, each gesture defined by a motion of the device with respect to a first position of the device;

mapping each of the gestures to a corresponding command;

identifying a matching one of the gestures based on the motion and to determine a corresponding one of the commands based on the identified gesture;

logically parsing a viewable image into a plurality of grid sections;

setting one of the grid sections as the current image; and

setting another one of the grid sections as the current image in response to the determined command.

16.   (Original) The logic of Claim 15, further operable when executed to perform the step of maintaining the current image while the cursor translates across the viewable surface.

17.   (Original) The logic of Claim 15, further operable when executed to perform the step of freezing translation of the cursor across the viewable surface in response to a command.

18.   (Original) The logic of Claim 15, further operable when executed to perform the steps of determining that the translation vector indicates translation of the cursor past an edge of the viewable surface and, in response, reducing a magnitude of the translation vector to maintain the cursor within the viewable surface.

19.   (Original) The logic of Claim 15, further operable when executed to perform the steps of detecting a value of the third component exceeding a threshold and, in response, performing an operation based on a current location of the cursor with respect to the current image.

20.   (Previously Presented) The logic of Claim 15, further operable when executed to perform the steps of:

detecting acceleration along a first axis;

detecting acceleration along a second axis, the second axis perpendicular to the first axis; and

detecting acceleration along a third axis, the third axis perpendicular to the first axis and perpendicular to the second axis;

detecting motion of the device using accelerations measured by the first accelerometer, the second accelerometer, and the third accelerometer; and

matching the accelerations against gesture definitions in the gesture database to identify potential indicated ones of the gestures.

21.   (Previously Presented) A motion controlled handheld device comprising:

means for generating an image on a viewable surface of the handheld device;

means for detecting motion of the device within three dimensions;

means for identifying components of the motion in relation to the viewable surface, the components comprising a first component parallel to the viewable surface, a second component parallel to the viewable surface and perpendicular to the first component, and a third component perpendicular to the viewable surface;

means for displaying a cursor on the viewable surface;

means for determining a translation vector that is substantially opposite to the sum of the first component and the second component;

means for translating the cursor across the viewable surface according to the translation vector in order to substantially maintain the position of the cursor in space with respect to the viewable surface;

means for storing a plurality of gestures in a gesture database, each gesture defined by a motion of the device with respect to a first position of the device;

means for mapping each of the gestures to a corresponding command;

means for identifying a matching one of the gestures based on the motion and to determine a corresponding one of the commands based on the identified gesture;

means for logically parsing a viewable image into a plurality of grid sections;

means for setting one of the grid sections as the current image; and

means for setting another one of the grid sections as the current image in response to the determined command.